

**Abstract**

A novel Bragg grating filter in optical waveguiding fiber with suppressed cladding mode coupling and method of producing same is disclosed. The novel grating structure is induced  
5 in both the core and the cladding of the optical fiber irrespective of the photosensitivity of the core or cladding to actinic radiation. Such core and cladding of the optical fiber need not be chemically doped to support the grating. The method incorporates an ultra short duration pulse laser source. Electromagnetic radiation provided from the laser propagates to a diffractive element positioned a specific distance to the target material such that the  
10 diffracted electromagnetic radiation forms a 2-beam interference pattern, the peaks of which are sufficiently intense to cause a change in index of refraction.